

**WHAT IS CLAIMED IS:**

1. A transistor comprising:
  - a source electrode and a drain electrode arranged in mutually opposing relation;
  - a semiconductor film comprising at least one layer disposed between the source electrode and the drain electrode;
  - a gate electrode disposed in adjacent relation to the semiconductor film; and
  - a gate insulating film disposed between the gate electrode and each of the source electrode, the drain electrode, and the semiconductor film, wherein
    - a concentration of fluorine contained in the gate insulating film is  $1 \times 10^{20}$  atoms/cm<sup>3</sup>
- 10 or less.
2. The transistor of claim 1, wherein the concentration of the contained fluorine is  $1 \times 10^{19}$  atoms/cm<sup>3</sup> or less.
3. The transistor of claim 1, which is of a field-effect type.
4. The transistor of claim 1, wherein the gate insulating film is an amorphous silicon nitride film.
- 15 5. The transistor of claim 1, wherein the gate insulating film is deposited by a CVD method.
6. A CVD apparatus used to deposit the gate insulating film in the transistor of claim 1, the CVD apparatus comprising:
  - 20 an electrode having a plurality of gas supply holes and disposed in a reaction chamber, wherein
    - a surface of the electrode is composed of a non-porous layer.
7. A transistor comprising the gate insulating film deposited by using the CVD

apparatus of claim 6.

8. A liquid crystal display device comprising the transistor of any one of claims 1, 2, 3, 4, 5, and 7 as a switching element for a pixel electrode portion.